



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200

C3-8-2
Job Sheet 175635



Part No: C3-8-2

Job Qty: 10 ea

DAS
21
3-89

Part Name: Solenoid



Part Weight: 0 lbs

Status: Scheduled

Priority: Medium

Job Created: 4/9/18

Job Tracking No:

Due Date: 4/30/18

Created By: Marie Lajeunesse

Type: SOLD

Description:

Note: DWG C3-8-2 Rev 3 IPP Rev A 18.04.06 new issue DP Verify DD

Ship Via:

Bill of Materials

Job Routing

Op No	Operation	Qty	Start Date	Due Date	Standard		Workcenter/Supplier		Sign-off
					Setup	Run	Workcenter / Supplier	Lead Time	
90	Start up Operation	10 Ea		4/28/18	0.00	0.00	Start Up Small Fab-4		
100	Small Fab	10 pcs		4/30/18	0.00	0.50	Small Fab-9		
110	QC	10 pcs		4/30/18	0.00	0.00	QC5		
130	Packaging	10 pcs		4/30/18	0.00	0.00	Packaging3-2		
140	QC21-FG	10 Ea		4/30/18	0.00	0.00	QC21		

Part Op 100 - 1-Assemble as per DWG sheet 1. ***Note 32446 22-16 crimp connectors supplied loose as per note 1***
Descriptions: 130 - Bag and tag

Job BOM

Part / Item	Component Name	Quantity	Operation	Container
32446	Crimp Terminal	20 Ea (2 ea)	90-Start up Operation	5047075
92373A143	Spring Pin	10 ft (1 ea)	90-Start up Operation	5060727
C3-8-2-1	Solenoid	10 Ea (1 ea)	90-Start up Operation	5082463-5027753
C3-8-2-2 Po	Solenoid Pin Spacer	10 Ea (1 ea)	90-Start up Operation	5075400
C3-8-3-1	Spacer	10 Ea (1 ea)	ion	5079032

Operation
90-Start up Op



Container No: S099611

Part: C3-8-2

Job No: 175635

Serial No/Batch: S099611

Revision: 3

Inspector:

Exp Date:

Instructions:

Date: 08/07/18

Inventory	Allocated
234	0
0	0
0	0
0	0
0	0

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

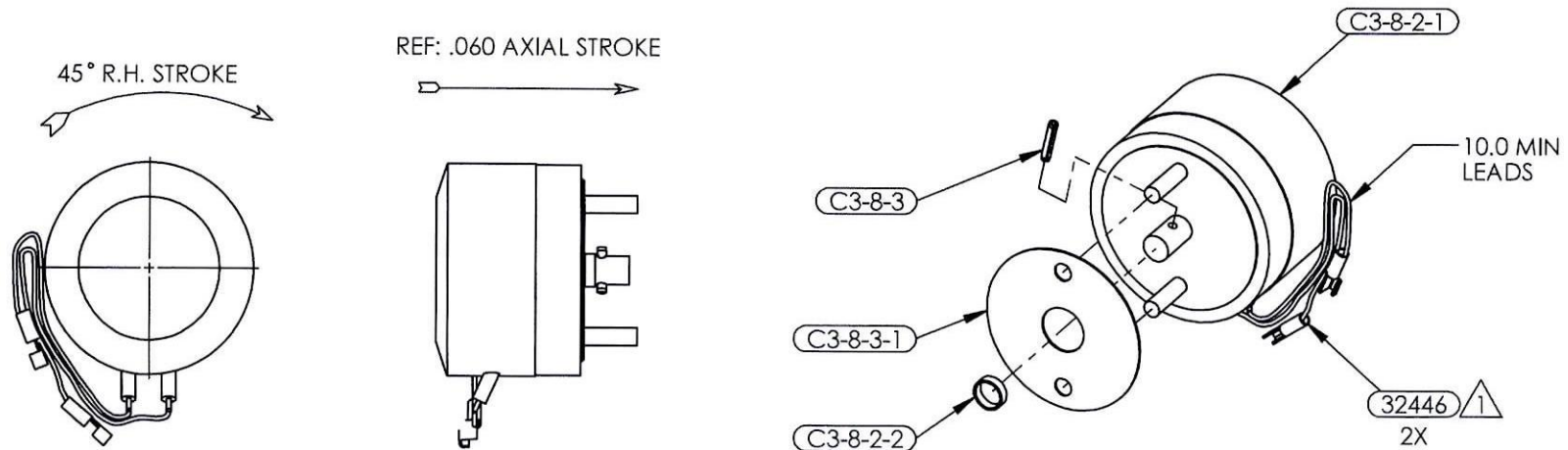
QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date :	Step #:	QTY Effective :		MRB (QSI042) Approval	
Description Work Order Deviation			Disposition		
			Completed By		
			Lead hand / Supervisor Approval Verification		
			QC / QA Coordinator Approval		
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐			FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐		
OTHER : ☐					

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REVISIONS					
REV	ECR	DESCRIPTION	DATE	INITIAL	APPROVED
1		ADDED SPACER C3-8-31.	10/10/2012	RJC	DW
1A	14-0111	CH'D TITLE BLOCK WAS RED BARN IS DART. ADDED ENGRAVE NOTE. ADDED NOTE $\triangle$.	8/7/2014	DJN	RW
2	14-0195	C3-8-2-1 CH'D DIM WAS LIMITS $\varnothing.0933-.0937$ IS LIMITS $\varnothing.094-.097$. ADDED "(CLOCKWISE)" TO NOTE $\triangle$. CH'D NOTE 4 WAS PLACE BUSHING AND PIN IN PLACE AS SHOWN AFTER DRILLING IS INSTALL SPACER AND PIN IN PLACE AS SHOWN ON SHEET 1 AFTER DRILLING. ADDED ENGRAVE BATCH NUMBER NOTE. C3-8-3-1 CH'D DIM WAS $\varnothing2.285$ IS $\varnothing1.95$. CH'D TOLERANCE ON NON-CRITICAL DIMENSIONS.	10/23/2014	DPD	JAG
3	15-0243	UPDATED TO NEW DRAFTING STANDARDS. C3-8-3-2 DELETED; REPLACED WITH 32446 .	8/25/2015	DPD	JAG



NOTE:

$\triangle$ CONNECTIONS SUPPLIED LOOSE.

ASSY QTY	ASSY QTY	B/O	Part #	UNIT QTY	Description	Material	B/O INFORMATION OR SPECIFICATIONS	PG.	MAT'L	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES	DRAWN BY:	APPROVED	HEAT TREAT	FINISH	SPEC	USED ON MODEL
		B/O	C3-8-2-1	1	SOLENOID		TESTCO #152951-001	1,2	.XXX $\pm .005$	FRACTIONS $\pm 1/8$	CANAM	<i>D. Wed</i>				
			C3-8-2-2	1	SOLENOID PIN SPACER	303 S.S.		3	.XX $\pm .01$	ANGLES $\pm 5^\circ$						
		B/O	C3-8-3	1	SPRING PIN	18-8 S.S.	$\varnothing3/32$ X $1/2$ (MCMASTER-CARR #92373A143)	1	.X $\pm .1$							
		B/O	C3-8-3-1	1	SPACER	PETG		4								
		B/O	32446	2	22-16 AWG KNIFE CONNECTOR		(ALLIED ELECTRONICS 32446)	1								

DART AEROSPACE	
TITLE SOLENOID ASSEMBLY	
DWG NO. C3-8-2	REV 3
MAT'L UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES .XXX $\pm .005$ FRACTIONS $\pm 1/8$.XX $\pm .01$ ANGLES $\pm 5^\circ$.X $\pm .1$	
1. BREAK ALL SHARP EDGES .015 x 45° OR .015R 2. DIMENSIONAL LIMITS APPLY AFTER PLATING	
SCALE 1:2	DATE 12/19/2001
SHEET 1 OF 4	

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

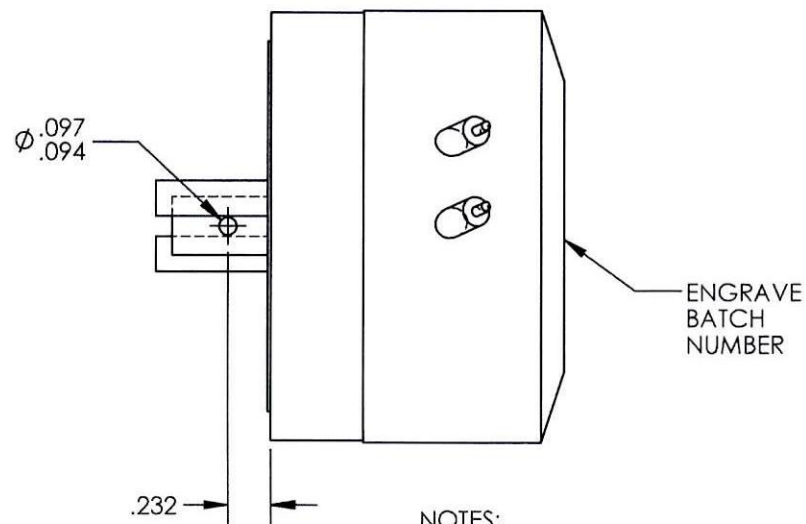
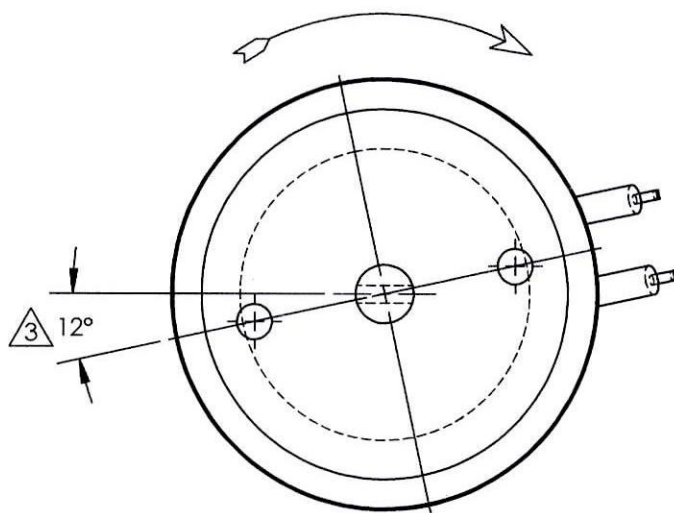
QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date :	Step #:	QTY Effective :		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY			
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐	No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐	Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐	Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐
OTHER : _____					

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REVISIONS				
REV	ECR	DESCRIPTION	DATE	INITIAL
2	14-0195	C3-8-2-1 CHD DIM WAS LIMITS $\varnothing.0933-.0937$ IS LIMITS $\varnothing.094-.097$. ADDED "(CLOCKWISE)" TO NOTE 3. CHD NOTE 4 WAS PLACE BUSHING AND PIN IN PLACE AS SHOWN AFTER DRILLING IS INSTALL SPACER AND PIN IN PLACE AS SHOWN ON SHEET 1 AFTER DRILLING. ADDED ENGRAVE BATCH NUMBER NOTE.	10/23/2014	DPD
				JAG



NOTES:

1. USE C3-8-2-F1 FIXTURE FOR DRILLING THE PIN HOLE.
2. REMOVE COIL SPRING BEFORE DRILLING HOLE.
3. TURN SHAFT AS SHOWN IN FIXTURE BEFORE DRILLING (CLOCKWISE).
4. INSTALL SPACER AND PIN IN PLACE AS SHOWN ON SHEET 1 AFTER DRILLING.

(C3-8-2-1)

SOLENOID WITH PINNED HOLE

DART AEROSPACE	
TITLE SOLENOID ASSEMBLY	
DWG NO. C3-8-2	REV 3
MAT'L UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES .XXX ± .005 .XX ± .01 .X ± .1	DRAWN BY: CANAM APPROVED <i>D Weil</i> HEAT TREAT FINISH SPEC 1. BREAK ALL SHARP EDGES .015 x 45° OR .015R 2. DIMENSIONAL LIMITS APPLY AFTER PLATING
SCALE 1:1	DATE 12/19/2001
SHEET 2 OF 4	

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

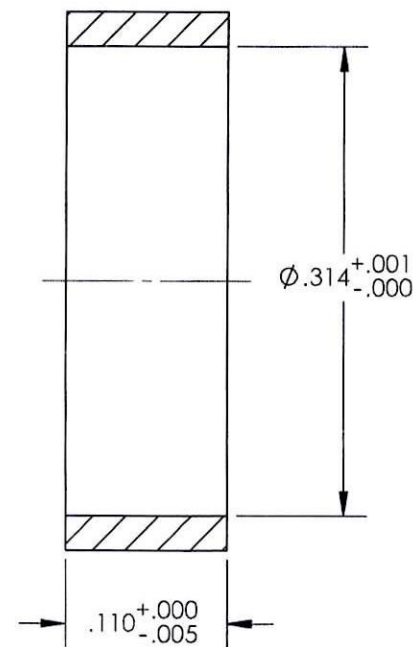
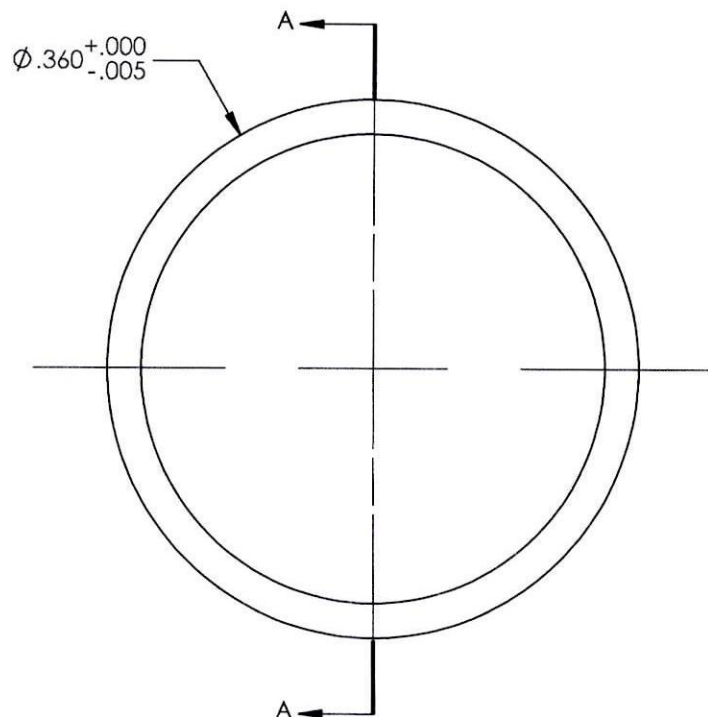
QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date :	Step #:	QTY Effective :		MRB (QSI042) Approval	
Description Work Order Deviation			Disposition		
			Completed By		
			Lead hand / Supervisor Approval Verification		
			QC / QA Coordinator Approval		
Root Cause		FAULT CATEGORY			
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐	No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐	Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐	Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐
OTHER :					

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REVISIONS					
REV	ECR	DESCRIPTION	DATE	INITIAL	APPROVED



SECTION A-A

C3-8-2-2

SPACER

DART AEROSPACE	
TITLE SOLENOID ASSEMBLY	
DWG NO. C3-8-2	REV 3
MAT'L 303 S.S.	DRAWN BY: CANAM
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES	APPROVED <i>D Weil</i>
.XXX ± .005 FRACTIONS ± 1/8	HEAT TREAT
.XX ± .01 ANGLES ± 5°	FINISH
.X ± .1	SPEC
1. BREAK ALL SHARP EDGES .015 x 45° OR .015R	USED ON MODEL
2. DIMENSIONAL LIMITS APPLY AFTER PLATING	
SCALE 8:1	DATE 10/31/2001 SHEET 3 OF 4

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

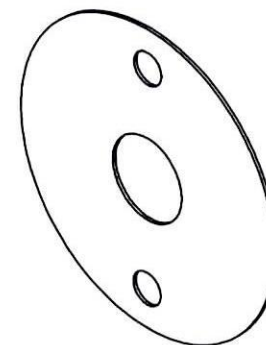
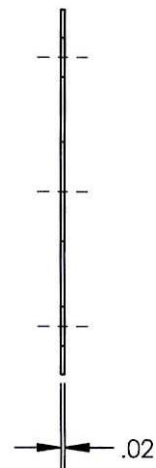
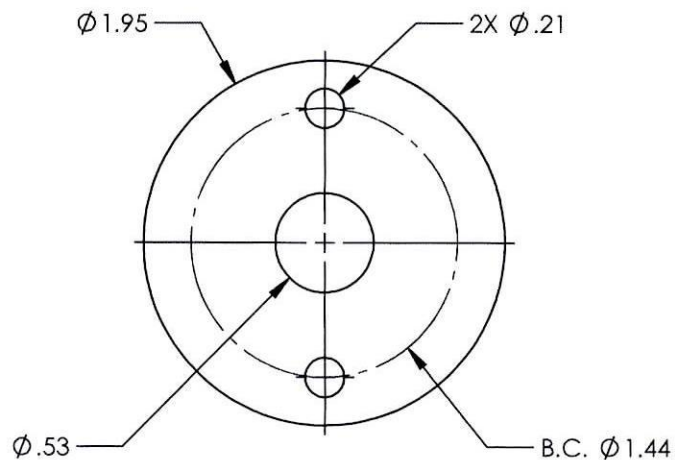
QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date :	Step #:	QTY Effective :		MRB (QSI042) Approval Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval	
Description Work Order Deviation		Disposition			
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐			
		OTHER : ☐			

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REVISIONS					
REV	ECR	DESCRIPTION	DATE	INITIAL	APPROVED
1		ADDED SPACER C-3-8-3-1	10/10/2012	RJC	DW
2	14-0195	C3-8-3-1 CHD DIM WAS Ø2.285 IS Ø1.95.	10/23/2014	DPD	JAG



C3-8-3-1

SPACER

DART AEROSPACE	
TITLE SOLENOID ASSEMBLY	
DWG NO. C3-8-2	REV 3
MAT'L PETG UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES .XXX ± .010 FRACTIONS ± 1/8 .XX ± .03 ANGLES ± 5° .X ± .1	DRAWN BY: APPROVED <i>D Weil</i> HEAT TREAT FINISH SPEC USED ON MODEL
1. BREAK ALL SHARP EDGES .015 x 45° OR .015R 2. DIMENSIONAL LIMITS APPLY AFTER PLATING	
SCALE 1:1	DATE SHEET 4 OF 4

DQA: _____ Date: _____

**WORK ORDER NON-CONFORMANCE / UPDATE**

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date : _____	Step #: _____	QTY Effective : _____		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY			
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐	No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐	Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐	Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐
OTHER : _____					